

EAT

Is Sugar Really Bad for You? It Depends

By **Anahad O'Connor** June 8, 2016 6:01 am

The federal government's decision to update food labels last month marked a sea change for consumers: For the first time, beginning in 2018, nutrition labels will be required to list a breakdown of both the total sugars and the added sugars in packaged foods. But is sugar really that bad for you? And is the sugar added to foods really more harmful than the sugars found naturally in foods?

We spoke with some top scientists who study sugar and its effects on metabolic health to help answer some common questions about sugar. Here's what they had to say.

Why are food labels being revised?

The shift came after years of urging by many nutrition experts, who say that excess sugar is a primary cause of obesity and heart disease, the leading killer of Americans. Many in the food industry opposed the emphasis on added sugars, arguing that the focus should be on calories rather than sugar. They say that highlighting added sugar on labels is unscientific, and that the sugar that occurs naturally in foods like fruits and vegetables is essentially no different than the sugar commonly added to packaged foods. But scientists say it is not that simple.

So, is added sugar different from the naturally occurring sugar in food?

It depends. Most sugars are essentially combinations of two molecules, glucose and fructose, in different ratios. The sugar in a fresh apple, for instance, is generally the same as the table sugar that might be added to homemade apple pie. Both are

known technically as sucrose, and they are broken down in the intestine into glucose and fructose. Glucose can be metabolized by any cell in the body. But fructose is handled almost exclusively by the liver.

“Once you get to that point, the liver doesn’t know whether it came from fruit or not,” said Kimber Stanhope, a researcher at the University of California, Davis, who studies the effects of sugar on health. Dr. Stanhope noted that while the liver may not know whether the fructose came from an apple or a soft drink, the way the liver processes that fructose could possibly be affected by some of the beneficial components in fruit. In contrast to soda, fruit contains fiber, vitamins, minerals and numerous other bioactive components. “We don’t know if and how these components may counteract the negative effects of fructose overload in the liver,” she said.

The type of sugar that is often added to processed foods is high-fructose corn syrup, which is the food industry’s favored sweetener for everything from soft drinks to breads, sauces, snacks and salad dressings. Made commercially from cornstarch, high-fructose corn syrup is generally much cheaper than regular sugar. It contains the same components as table sugar – glucose and fructose – but in slightly different proportions.

What about “natural” sweeteners?

Food companies like to market agave nectar, beet sugar, evaporated cane juice and many other “natural” sweeteners as healthier alternatives to high-fructose corn syrup. But whatever their source, they are all very similar. To suggest one is healthier than another is a stretch, experts say. In fact, last month, the F.D.A. urged food companies to stop using the term evaporated cane juice because it is “false or misleading” and “does not reveal that the ingredient’s basic nature and characterizing properties are those of a sugar.”

Is high-fructose corn syrup worse than regular sugar? How is it different?

High-fructose corn syrup and regular sugar are so similar that most experts say their effects on the body are essentially the same.

The main difference is that the variety of high-fructose corn syrup used in soft drinks tends to have more fructose. In one 2014 study, researchers analyzed more than a dozen popular soft drinks and found that many sweetened with high-fructose corn syrup – including Pepsi, Sprite, Mountain Dew, Coca-Cola and Arizona Iced Tea – contained roughly 40 percent glucose and 60 percent fructose. Regular sugar contains equal parts glucose and fructose.

Why doesn't the F.D.A. require that added sugars be listed in teaspoons rather than grams?

When the new food labels go into effect, the daily recommended limit for added sugars will be 50 grams, or roughly 12 teaspoons, daily. (One teaspoon of sugar is 4.2 grams.) But the new food labels will list the amount of added sugars solely in grams.

Many nutrition advocates have urged the F.D.A. to require that food labels list added sugars in both teaspoons and grams on food labels, arguing that Americans often underestimate the actual amount of sugar in a product when it's expressed in grams alone.

But the F.D.A. ultimately sided with the food industry, which opposed the teaspoon proposal.

"It would be difficult, if not impossible, for a manufacturer to determine the volume contribution that each ingredient provides toward the added sugars declaration," the agency said. "For example, a cookie made with white chocolate chips and dried fruit would have added sugars in the form of sugar in the batter as well as in the white chocolate chips and the dried fruit." The F.D.A. also said that requiring both grams and teaspoons would "cause clutter and make the labels more difficult to read."

But Michael Jacobson, the president of the Center for Science in the Public Interest, an advocacy group that had petitioned the F.D.A. to require the teaspoon measurement, said the agency was under enormous pressure from the food industry, "which knows that consumers would be far more concerned about a product labeled 10 teaspoons than 42 grams."

So what's the issue with added sugars?

It mainly comes down to the way they're packaged.

Naturally occurring sugar is almost always found in foods that contain fiber, which slows the rate at which the sugar is digested and absorbed. (One exception to that rule is honey, which has no fiber.) Fiber also limits the amount of sugar you can consume in one sitting.

A medium apple contains about 19 grams of sugar and four grams of fiber, or roughly 20 percent of a day's worth of fiber. Not many people would eat three apples at one time. But plenty of children and adults can drink a 16-ounce bottle of Pepsi, which has 55 grams of added sugar – roughly the amount in three medium apples – and no fiber. Fiber not only limits how much you can eat, but how quickly sugar leaves the intestine and reaches the liver, Dr. Stanhope said.

"You can't easily eat that much sugar from fruit," she said. "But nobody has any problem consuming a very high level of sugar from a beverage or from brownies and cookies."

Why is it a problem to have too much sugar?

Many nutrition experts say that sugar in moderation is fine for most people. But in excess it can lead to metabolic problems beyond its effects on weight gain. The reason, studies suggest, is fructose. Any fructose you eat is sent straight to your liver, which specializes in turning it into droplets of fat called triglycerides.

"When you ingest fructose, almost all of it is metabolized by the liver, and the liver is very good at taking that fructose and converting it to fat," said Dr. Mark Herman, an assistant professor of medicine at Harvard. Studies show a predictable response when people are asked to drink a sugary beverage: A rapid spike in the amount of triglycerides circulating in their bloodstreams. This also leads to a reduction in HDL cholesterol, the so-called good kind.

Over time, this combination – higher triglycerides and lower HDL – is one major reason sugar promotes heart disease, said Dr. Aseem Malhotra, a cardiologist and adviser to the United Kingdom's national obesity forum. This sequence of events

may even overshadow the effects of LDL cholesterol, the so-called bad kind.

“What many people don’t realize is that it’s triglycerides and HDL that are more predictive of cardiovascular disease than LDL cholesterol,” Dr. Malhotra said. “I’m not saying LDL isn’t important. But if there is a hierarchy, triglycerides and HDL are more important than LDL.”

Dr. Malhotra said that when people reduce their sugar intake, “their overall cholesterol profile improves.”

“I see this in so many of my patients,” he added. “The effects are rapid.”

How much sugar is too much?

One of the largest studies of added sugar consumption, which was led by the Centers for Disease Control and Prevention, found that adults who got more than 15 percent of their daily calories from added sugar had a higher risk of cardiovascular disease. For the average adult, that translates to about 300 calories, or 18 teaspoons of added sugar, daily. That may sound like a lot, but it’s actually quite easy to take in that much, or even more, without realizing it. A single 12-ounce can of Coca-Cola, for example, has almost 10 teaspoons of sugar; it can add up quickly.

The study found that most adults got more than 10 percent of their daily calories from added sugar, and that for 10 percent of people, more than 25 percent of their calories came from added sugar. The biggest sources for adults were soft drinks, fruit juices, desserts and candy.

While those might seem like obvious junk foods, Dr. Malhotra said, about half of the sugar Americans consume is “hidden” in less obvious places like salad dressings, bread, low-fat yogurt and ketchup. In fact, of the 600,000 food items for sale in America, about 80 percent contain added sugar.

Everyone’s tolerance for sugar is different. Studies show, for example, that people who are already obese may be more susceptible to metabolic harm from sugar than others. But Dr. Malhotra said that he generally advises people to follow the World Health Organization’s guidelines, which recommend that adults and children consume no more than about six teaspoons daily of added sugar.

“Could I tell you the exact limit where sugar starts to definitely impact cardiovascular health?” he said. “That’s difficult. But I think if people stick within the W.H.O. limits, then their risk is reduced.”

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